



openDBL

Improving Buildings is Improving EU

D4.10 - Communication, dissemination and stakeholders' activities report - M6

Disclaimer and acknowledgements



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Additional authors and contributors	Cristina Chirea, ASRO Mario Caputi, IN		
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Glossary of terms and acronyms used

Table 1 Glossary of terms and acronyms used

Acronym/Term	Description
D&C	Dissemination and Communication
EU	European Union
EC	European Commission
SS	Screen shot
WP	Work package

Executive summary

As a part of WP4, this document serves as a communication and dissemination report on stakeholders. The objective of this deliverable is to provide a plan to build a connection with other initiatives and create stakeholder engagement.

This report is the first deliverable on the stakeholder engagement based on the work done in the first 6 months of the project. This report notably details how openDBL will engage other EU initiatives through a thorough mapping of EU projects, similar initiatives and standardization committees.

This task is performed under WP4, T4.4. As the WP leader DIGI and task leader ASRO are responsible for reaching maximum number of stakeholders to boost the synergies between similar EU initiative, new and old projects. Standardization plays a crucial role in the project, therefore ASRO has developed an extensive list of standardization committees (National, EU, International level) to reach in the next phase of the project.

All partners will be actively involved in this task to reach a good number of stakeholders from different verticals that can contribute to the project.

1. Introduction

1.2. openDBL project summary

openDBL intends to integrate multidisciplinary know-how to cover the requirements of the Call and solve the issues of the current situation. The challenge of the project is to allow, through the development of OpenAPI, the disposal of openDBL in a unique standardized platform and create useful content, to simplify the workload of the AECO industry.

The project pursues 3 objectives: 1) create a DBL with useful content and functionalities, 2) ensure openDBL is usable and simple to use, reducing the time spent to upload, search and process the information and data to facilitate usage and gain wide adoption, 3) ensure attractive economics, through value propositions and convenient pricing. We'll provide any user with an integrated platform for their digitization needs; ensure that information and data conform to the latest trends and needs of our target clients and support the EU's circular economy and green policies; develop automatic classification systems and data standards; facilitate the operation and maintenance activities of the buildings. This will be achieved creating an Information Delivery Manual and a Data Model and further developing our existing platform used to create a DBL for an important Italian Public Contracting Authority. openDBL will support data matching with external databases and will integrate state of-the art technologies (AI, Blockchain, IoT and VR). Our ambition is to make openDBL the platform of reference for the monitoring of building consumption, transparencies of transactions and official documents, and the positive impact on maintenance and environment.

To reach its goals openDBL is divided into 6 WPs with different goals, tasks and deliverables. The goal of WP4 is Goal is to conduct targeted, effective and high-impact communication, and outreach activities of project results. Exchange of results, information and findings with end-users, stakeholders and other relevant parties is envisaged. As specific objectives: 1) Deliver tailored communication & awareness actions to specifically targeted audiences; 2) Promote the project and its outputs to the largest possible audience, maximizing the expected impacts of openDBL; 3) Iterative assessment and improvement of communication activities; 4) Implement and follow a dedicated stakeholder engagement strategy; 5) Define the Dissemination Plan, 6) Implement dissemination actions, including networking & clustering, 7) Define the transferability of the project's results and its further use by all partners.

1.2. Mapping openDBL outputs

Table 2 openDBL work description

openDBL GA Component Title	openDBL GA Component Outline	Respective Document Chapter(s)	Justification
DELIVERABLE			
D4.10 Communication, dissemination and stakeholders' activities report - M6	This deliverable focuses on the creating the connection and find synergies between other similar initiatives at EU level. It also focuses on the stakeholders from different countries in project fields like policy makers, researchers, national, European and international level.	<i>Section 4</i>	- The document provides an extensive list of similar EU initiatives and projects. - Another list consists of all standardization committees (National and European/International level).
TASKS			
T4.4 Connection with other initiatives and Stakeholder Engagement Plan	All partners' goal is to ensure the connection and alignment of this project to other similar initiatives at EU level. Stakeholders from different countries in project fields like policy makers, researchers, international (ISO/TC 59, for ex), European (CEN/TC 442, CENELEC TC 205) and other formal standardization Technical Committee members or other activities related to standardization (for ex.: DigiPLACE (Digital PLAtform for Construction in Europe), BIM4EEB (BIM based	<i>Task 4.4</i>	ASRO and DIGI made the lists of similar EU initiatives and projects along with standardization committees (National and European/International level) and DIGI has started contacting them for collaborative approach (webinar during circular week for example). They will be informed time to time about the project results through different communication channels and relevant initiatives through our Knowledge Sharing Plan.

	fast toolkit for Efficient rEnovation of residential Building)), who could provide the final input for use cases, will be consulted and enrolled from the first stage of the project. Regular contact with stakeholders through newsfeeds, workshops, roundtables and events will provide the Consortium with stakeholders' views. Stakeholders will be actively involved in communications actions, increasing their impact. Also synergies with the Horizon Europe 'Built4People' programmed partnership will be pursued. A workshop will be organised in M14) in order to connect the public, the target groups, the media and the stakeholders to the project, whereas a final event in M34 will be organized to communicate the project and inform key stakeholders on the project's main results, continue the dialogue and enhance exploitation.		
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Deliverable Overview and Report Structure

In this deliverable the goal is to ensure the connection and alignment of openDBL to other similar initiatives at EU level. Stakeholders from different countries in project fields like policy makers, researchers, international (e.g., ISO/TC 59), European (e.g., CEN/TC 442, CENELEC TC 205) and other formal standardization Technical Committee members or other activities related to standardization.

Section 1 gives an overview of task 4.4.

Section 2 focuses on networking and clustering activities and provides the extensive lists of stakeholders.

Section 3 provides the tools strategies to maximize stakeholder engagement.

1. Overview of Task 4.4

1.1. Methodology

To ensure adequate and relevant engagement of the stakeholder, Digi has created a methodology based on the project timeline.

Table 3 – Different phases of action and corresponding timeline

Phase	Action	Time
Preparatory	Initial findings of the relevant stakeholders	M0-M6
Planning	Contacting the stakeholders based on the project needs	M7-12
Execution	Execute the actions planned	M13-36
Analysis & Monitoring	Keep analyzing and monitoring the involvement of the stakeholders and continue and drafting different engagement strategies.	M13-36

1.2. Preparatory phase

The first 6 months of the project are the preparatory phase of the task. This time has been dedicated to finding relevant stakeholders (e.g., by organizing an internal workshop to identify relevant stakeholders as shown in Figure 1). Several interested stakeholders are already engaged through different media channels. This task is divided into two parts. One is to detail a list of EU initiatives and the other one focuses on the standardization committees, policy makers etc.

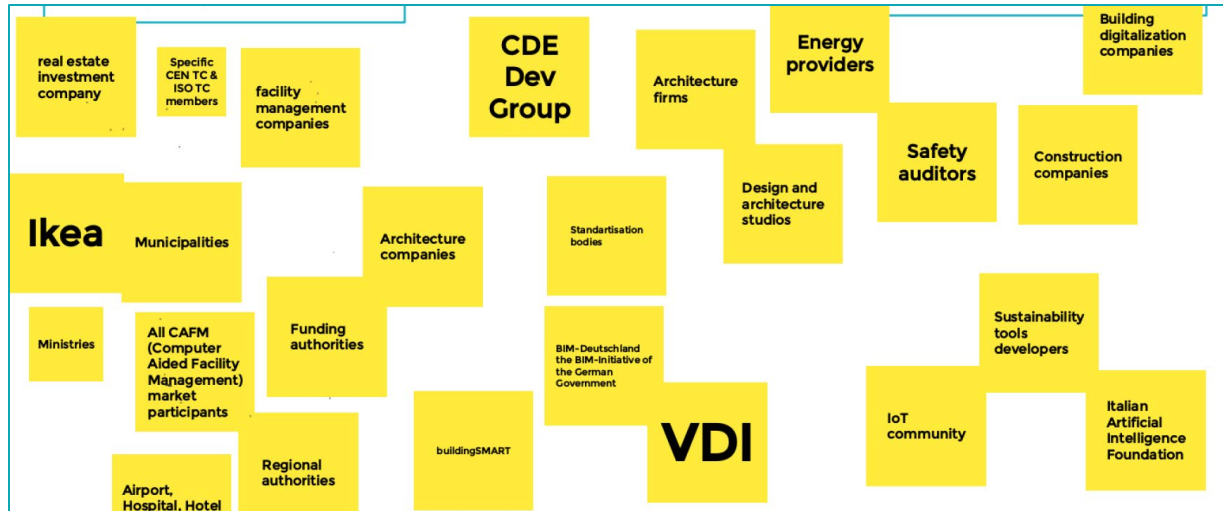


Figure 1 – Internal workshop to identify openDBL stakeholders.

1.2.1. Breaking the ice in the kick-off meeting

The first stakeholder analysis workshop was performed during the project kick-off where all the partners have given an initial idea of different stakeholders such as key players, context setters, advocates etc. (Annex I). A full list of stakeholders has started being developed from M2.

2. Networking and clustering

As mentioned above, the first 6 months have been the key to deep diving and include a maximum number of potential stakeholders on the project list.

To have a better impact of the project and build a strong community, openDBL team has started tailored networking and clustering activities with existing projects and initiatives. There are different objectives behind the clustering activities:

1. Discuss technical ambitions between projects and similar initiatives and find synergies.
2. Find best practices to learn from a collaborative approach
3. Amplify the impact of dissemination and communication among the community
4. Explore the potential to find synergies and build a strong ecosystem
5. Create a community that will create awareness of EU citizens.
6. Through knowledge exchange gaining better industry insights, research interest

7. Finding industry visibility for exploitation of the project.

2.1. Sister Projects and similar initiatives

The following platforms and similar actions at European level are listed below:

Table 4 – Sister projects and similar initiatives

Acronym	Project Name	Short Description
DigiPLACE	Digital PLAtform for Construction in Europe	DigiPLACE is a framework allowing the development of future digital platforms as common ecosystems of digital services that will support innovation, commerce, etc. It will define a Reference Architecture Framework for digital construction platform based on an EU-wide consensus involving a large community of stakeholders, resulting in a strategic roadmap for successful implementation of this architecture.
BUILDCHAIN	BUILDing knowledge book in the blockCHAIN distributed ledger.	The idea is to Build a Knowledge Base, that can be used to trace all activities related to the overall life-cycle of buildings. Since various directives of the EU are related to sustainability, resilience and energy efficiency of building stock, it is necessary to provide a marketplace where various actors can share their offers, including their quality certificates and credentials, and where it would be possible to log and trace every information, activity and change, and use the knowledge to improve sustainability. The project will extend a Digital Building LogBook (DBL), used by a municipality for the management and the administration of its huge set of buildings, with several available and novel data, tools and functionalities, by the help of a Decentralized Knowledge Graph (DKG), an open source blockchain-based solution.
Demo-BLog	Development and Demonstration of Digital Building Logbooks	Transparency and access to information are critical for the European energy efficient and sustainable buildings market. Construction, building occupation/management, transactions and investment and financing decisions heavily rely on transparent data availability. Limited information availability and lack of a common digital data repository increase costs and inefficiencies in designing, constructing, operating and financing buildings. The CEAP recognises Digital Building Logbooks as circularity enablers and the Renovation Wave states that DBLs will integrate all related data from upcoming building renovation passports, smart readiness indicators, Level(s) and EPCs. Demo-BLog brings together: (i) 5 different DBLs with a total of 4.5 million registered units and a wide variety of target groups (homeowners, municipalities, building professionals and architects) offering scale and diversity; (ii) 4 diverse functionalities addressing key societal challenges,

		ranging from 'quick wins' (renovation and advice and (community driven) decarbonisation pathway) to complex industrial transaction objectives (circularity); (iii) partners, frontrunners in R&D, policymaking and market implementation in highly visible platforms over the last 5 years and (iv) substantial opportunities to build and leverage parallel projects and activities focussed on evolving/scaling the participating building logbooks.
CBIM	Cloud-based Building Information Modelling	By 2050, the world's population will have reached 10 billion. The building and infrastructure industry must look to smarter and efficient ways to design. Building information modelling (BIM) enables the creation of an intelligent 3D model where every detail of a building is modelled to explore design options and create visualisations that help stakeholders understand what the building will look like before it's built. The model is then used to generate the design documentation for construction. The digital versions (known as 'digital twins') can be placed on the cloud, which can serve as a repository of all asset data throughout the life-cycle. The EU-funded CBIM project will raise awareness on how BIM technologies can digitise the built infrastructure.
BIM2TWIN	Optimal Construction Management & Production Control	The use of advanced technology is essential for improving the construction industry by allowing for more efficient management, increased productivity, and reduction of operational waste and carbon footprint. The EU-funded BIM2TWIN project will create a Digital Building Twin (DBT) platform for construction site management using artificial intelligence (AI) and semantic linked data techniques. The platform will provide full situational insight on the as-built product and as-performed processes, which will be used and compared to the as-designed product and as-planned processes through an extensible set of construction management applications to implement a closed-loop Plan-Do-Check-Act process. The full process will rely on multiple onsite sensors for data acquisition and cross-domain analysis, and complex AI-based event processing. The DBT will offer an application programming interface allowing construction management applications to interoperate with its data/information/knowledge bases.
Smart2	Smart Tools for Smart Buildings: Enhancing the intelligence of	The project Smart Square, aims to develop and deliver the appropriate tools and applications, which will enable the promotion and establishment of intelligence assessment of buildings in Europe, through buildings Smart Readiness Indicator (SRI) scheme. Smart Square aspires to deliver a cloud based open platform for assessing the intelligence of buildings,

	buildings in Europe	available in all 24 EU official languages, considering as well the specificities of the Member States, with a view to maximize synergies with other EU initiatives.
Auto-DAN Project	Auto Dan Project	Auto-Dan is a Horizon 2020 project that will deploy augmented intelligence solutions in EU buildings using data analytics, an interoperable hardware/software architecture, and a novel self-energy assessment methodology. Auto-DAN aims to enable homes and small businesses across the EU to optimize their energy consumption and provide an assessment of the live energy performance of a building, taking into account the quality of appliances/systems installed, user operational habits, and the smart readiness of a building. The solution is rooted in augmented intelligence which will focus on the assistive role of automation in buildings, emphasizing that cognitive technology is designed to enhance human intelligence rather than replace it and the occupant is a proactive component of the building.
COLLECTiEF project	COLLECTiEF	COLLECTiEF develops software and hardware packages to make buildings smarter of many different typologies common in Europe and their legacy equipment on a large scale, sort out consumer-centric and industry-centric problems, and maintain simple and robust communication with the energy grid.
PHOENIX project	PHOENIX	PHOENIX aims at changing the role of buildings from unorganised energy consumers to active agents orchestrating and optimising their energy consumption, production and storage, with the goal of increasing energy performance, maximising occupants' benefit, and facilitating grid operation. The project will design a portfolio of ICT solutions covering all aspects from hardware and software upgrades needed in legacy equipment and optimal deployment of sensors, to data analytics and services for both building users and energy utilities. PHOENIX will take advantage of artificial intelligence technologies, as well as edge/cloud computing methods, to provide the highest level of smartness to existing buildings.
SATO Project	Self Assessment Towards Optimization of Building Energy	The SATO project will develop a state-of-the-art building energy assessment and optimization platform with the integration of cloud-based data managing and computing resources with 3D Building Information Modelling (BIM) tools, IoT sensors and devices at the building level. The project will develop and demonstrate solutions that, independently of the building type, can provide Internet-of-Things (IoT) capabilities to new and legacy energy devices that are integrated into the SATO management platform which will increase the smartness of buildings, allowing them to provide energy services, energy efficiency, indoor comfort and energy flexibility.

easySRI	easySRI	easySRI aims to facilitate the transition to smart-ready buildings by providing an easy-to-use web platform that offers services for automated calculation of Smart Readiness Indicator. easySRI promotes user awareness and provides recommendations towards optimizing building performance and smartness, trainings and certification packages, and develops novel business models for the uptake of SRI and smart ready technologies.
sri2market	Smart Readiness Indicator (SRI)	The Smart Readiness Indicator (SRI) is a common EU scheme for rating the smart readiness of buildings. Article 8 and Annex IA of the Directive (EU) 2018/844 amending Directive (EU) 2010/31, introduces the definition of the "smart readiness indicator" for buildings and Commission Delegated Regulation of 14.10.2020 supplementing Directive (EU) 2018/844 by establishing an optional common European Union scheme for rating the smart readiness of buildings. The SRI of a building or building unit is expressed by a rating that derives from a total smart readiness score expresses as a percentage and that represents the ratio between the smart readiness of a building or building unit compared to the maximum smart readiness that it could reach.
INPERSO Project	INDustrialised and PERsonalised Renovation for Sustainable SOcieties	The INPERSO project will deliver inclusive, affordable, efficient, and sustainable renovation which will be adaptable to various climate zones and building typologies but focused on residential and heritage buildings.
SRI-ENACT	Smart Readiness Indicator (SRI)	SRI-ENACT provides a holistic solution to facilitate the Smart Readiness Indicator (SRI) uptake in Europe, by engaging stakeholders in the co-creation of national-tailored SRI implementations and the development of the SRI-ENACT toolkit, encompassing SRI assessment and decision support tools to promote informed decision making for smartness upgrades.
SMART2_project	SMART2 project	SMART2 project will build on the results achieved in project SMART by advancement, innovation and implementation of SMART2 on-board long-range all-weather obstacle detection (OD) and track intrusion detection (TID) system. Two new systems will be also researched, innovated and developed: advanced SMART2 trackside (TS) /airborne OD&TID system. All three systems will be integrated into a holistic OD&TDI system via interfaces to central Decision Support System (DSS). A holistic approach to autonomous obstacle detection for

		railways would enable increased detection area including areas behind a curve, slope, tunnels, and other elements blocking the train's view on the rail tracks, in addition to a long-range straight rail-tracks OD. The data recorded will be processed to inform DSS about possible obstacles and track intrusions in their fields of view. DSS will integrate information coming from three OD&TID sub-systems and will make a final decision on OD&TID and will suggest possible actions for train control. SMART2 platform will be flexible and open for interfacing additional OD&TDI modules based on future technologies.
Smart Buildings in Use	The Smart Buildings in Use	The Smart Buildings in Use project is a cluster of and for companies, with Build wise as the driving force behind the initiative. The cluster's program is tailored to the needs of the members, but the members also help determine the program themselves. Active involvement is expected from them. The project aims to support stakeholders answering trade-offs between energy and comfort applications in Smart Buildings and technology for management and maintenance The project facilitates users willing to put one of their innovative projects in the spotlight or those looking for a partner to install smart sensors to make buildings more comfortable.
Nebula B4P	NEBULA BUILT4PEOPLE (B4P)	NEBULA is a channel for updates on the Build4People partnership, the New European Bauhaus, and networking with related R&D projects and innovators. It is an EU-funded project that will establish a network of Built4People Innovation Clusters (B4PICs), connecting and scaling innovations across Europe.
New European Bauhaus	The New European Bauhaus	The New European Bauhaus initiative connects the European Green Deal to our daily lives and living spaces. It calls on all Europeans to imagine and build together a sustainable and inclusive future.
Built4People R&I Partnership	BUILT4PEOPLE (B4P)	BUILT4PEOPLE (B4P) is a co-programmed partnership in Horizon Europe's Cluster 5 (Climate, Energy and Mobility). It brings together the European Commission (EC) and two leading associations (ECTP and WorldGBC Europe) with a membership base of actors in the built environment. The partners co-program EU research and innovation funding for the built environment, ensuring it is invested in projects which will accelerate innovations towards a sustainable,

		people-centric transformation of Europe's built environment sector. The Built4People partners bring the whole value chain to accelerate people-centric innovation for a sustainable built environment. Within the context of this partnership, a Strategic Research and Innovation Agenda for the next few years has been developed that determines the topics in which the EU-funds will be invested.
BuiltHub project	The BuiltHub project	Dynamic EU building stock knowledge hub - BuiltHub is a 4-year European Project funded by the EU Horizon 2020 program. The project seeks to positively disrupt policy and market design targeting buildings by collecting, processing, and sharing building stock data in a publicly available online platform tailored to users' needs. The BuiltHub platform should change the way knowledge of the EU building stock is developed and shared by representing the full range of building stakeholders from across Europe.
MATRYCS	MATRYCS	MATRYCS aims at addressing emerging challenges in big data management for buildings with an open holistic approach providing an open cloud-based data analytics Toolbox.
D ² EPC	D ² EPC Dynamic Energy Performance Certificates (EPCs)	D²EPC aims to set the grounds for the next generation of dynamic Energy Performance Certificates (EPCs) for buildings. The proposed framework sets its foundations on the smart-readiness level of the buildings and the corresponding data collection infrastructure and management systems. It is fed by operational data and adopts the 'digital twin' concept to advance Building Information Modelling, calculate a novel set of energy, environmental, financial, and human comfort/well-being indicators, and through them the EPC classification of the building in question. This project has received funding from the European Union's Horizon 2020 research and innovation program under grant agreement No. 892984.
Interconnect Project	InterConnect Project	Interconnect is a European project which aims to develop and demonstrate advanced solutions for the digitalization of the electricity sector. The solutions developed within the scope of InterConnect will allow a digitalization of the power system based on an Internet of Things (IoT) architecture which, by including digital technologies (artificial intelligence, Blockchain, Cloud and Big

		Data), ensures the interoperability between equipment, systems and privacy/cybersecurity of user data. The energy users in buildings, whether residential or of services, the operators of the distribution grid, and the energy distributors will have the opportunity to take advantage of these solutions. The proposed solutions will be validated through 7 scale pilots. Portugal, France, Greece, Germany, Belgium, Italy, and the Netherlands. InterConnect is coordinated by the Institute for Systems and Computer Engineering, Technology, and Science (INESC TEC) and includes the participation of 56 entities from 11 European countries. This project has received funding from the European Union's Horizon 2020 research and innovation program under Grant Agreement No 857237.
DigiBUILD Project	DigiBUILD project	Traditional silo approaches, where stakeholders manage their data, could be replaced by digital and smart buildings, merging heterogeneous data sources, and placing the stakeholders as the core of these buildings. DigiBUILD will catalyze this much-needed transformation by making use of high-quality data and next-generation digital building services, supporting the deployment of the EU-wide Framework for a Digital Building Logbook. An inclusive environment for multi-stakeholder knowledge exchange (based on the European Bauhaus initiative) will be applied to co-design end-user-oriented services. DigiBUILD will provide an open, interoperable and cloud-based toolbox to transform current 'silo' buildings into digital, interoperable and smarter ones, based on consistent and reliable data, supporting better-informed decision-making for performance monitoring & assessment, planning of building infrastructure, policy-making, and de-risking investments. It will be built on top of existing platforms and common EU initiatives, towards an Energy Efficient Building Data Space, based on standard cloud-data platform frameworks (FIWARE) and Data Space initiatives (GAIA-X and IDSA). On top of this advanced data governance framework, we will create AI-based data analytics and Digital Building Twins based on high-quality data, aiming to facilitate transparency, trust, informed decision-making, and information

		sharing within the built environment and construction sector, which will be deployed across 10 real-world conditions (TRL 8). DigiBUILD will contribute to the uptake of digital technologies in the building sector to better align the EU Member States' long-term renovation strategies with the EPBD requirements on decarbonization, and a path towards a climate-neutral building stock by 2050.
Smart2BProject		Smart2B aims to create a smart building system, consisting of the Smart2B devices, platform, and services, that places citizens, building users, and CECs at the heart of the building energy transition, by enabling smart buildings to interact with their occupants and the grid in real-time to untap energy efficiency and local flexibility. This approach will transform the existing building stock into an interconnected active element of the energy system by upgrading existing building equipment, individual buildings, and entire building blocks to higher smartness levels.
Construction Products	Construction Products Europe	Construction Products Europe aims to facilitate sustainable competitive growth of the European construction products industry by promoting efficient housing and infrastructure solutions through consensus and dialogue with the European Institutions and societal stakeholders. To achieve this, we monitor European legislative, administrative and economic measures affecting the construction materials and building products industry, and ensure, whenever possible, that the industry's interests are taken into account.
BuildHEAT	BuildHEAT	BuildHEAT drives change in the construction sector, brings information and coherence onto the market, facilitating the decision making and planning processes through: Efficient, reliable, non-intrusive and cost-effective technologies readily made available on the market. Functional, systemic and easy-to-implement solutions, enhancing energy standards, comfort and health, with an investment cost in the range of 50-60% lower than the new built. Innovative business models are designed to mobilize large investments from the public and private sectors.
P2ENDURE	P2ENDURE	P2ENDURE mainly aims to provide scalable, adaptable and ready-to-implement innovative PnP prefab solutions for deep

		renovation of building envelopes and technical systems. The innovative solutions will be complemented with a proof-of-performance, which is based on pilot implementation and monitoring in 10 live demonstration projects representing deep renovation characteristics in all main EU geo-clusters. Through this, P2ENDURE will ensure that the PnP solutions are ready for EU-level market upscaling by 2020. The project demonstrates the most optimal solutions for deep renovation, which are characterized as affordable, eligible for rapid production and installation, as well as replicable, compatible and adaptable to the widest range of building types and geo-clusters across Europe.
STUNNING project	STUNNING	The project STUNNING aims at building up a stakeholder community around a Renovation Hub designed as a knowledge sharing platform, providing information on innovative solutions for building renovation and novel business models (illustrated through case studies) for their adoption and large-scale replication. The provided solutions involve affordable and adaptable refurbishment packages, taking into consideration the whole renovation value chain.
ProGETonE	Proactive synergy of inteGrated Efficient Technologies on buildings' Envelopes	ProGETonE develops and proves an integrated approach to tackle two important needs in existing buildings: safety upgrades to face future earthquakes in seismic zones and nearly zero energy consumption to be aligned with EU climate change reduction targets. Residents in two pilot sites in Greece and the Netherlands will be involved in the design and implementation process from the beginning to consider their views and motivations, to deliver satisfying renovations for them and spread them to other EU citizens. ProGETonE stands for Proactive synergy of inteGrated Efficient Technologies on buildings' Envelopes and has a total budget of 5 million euros including funding from the European Union's Horizon 2020 research and innovation program under grant agreement No 723747. The consortium developing the action comprehends universities, technical consultants, manufacturers, SME's, public authorities and associations from 8 countries.
BPIE	Building Performance Institute	BPIE is Europe's leading independent think tank on energy performance of buildings. Their vision is a climate-neutral built environment, aligned with the ambition of the Paris Agreement, and in support of a fair and sustainable society.

	Europe	Their mission is to support the development of ambitious, yet pragmatic building-related policies and programs at EU and Member State level and to drive their timely and efficient implementation.
HEART	The Holistic Energy and Architectural Retrofit Toolkit (HEART)	The Holistic Energy and Architectural Retrofit Toolkit (HEART) brings together different components and technologies that can transform existing buildings into smart buildings, thus contributing to the Renovation Wave to decarbonise Europe's building stock. In developing this toolkit, the project advances and improves energy efficiency and the use of renewable energies in buildings across Europe, particularly in Central and Southern Europe, where climate change is leading to increased electricity consumption during the summer and winter seasons.
ENVISION	Envision	Envision is an EU funded project that will demonstrate a full renovation concept that, for the first time, harvests energy from ALL building surfaces (both transparent and opaque). This project is supported by the European Commission under the H2020 Framework Programme.
Eensulate project	EENSULATE	EENSULATE aims to develop innovative lightweight and highly insulating energy efficient components and associated enabling materials for cost-effective retrofitting and new construction of curtain wall facades. Eensulate is ambitious as brings to the market a novel unitized curtain wall system capable of meeting the market demand for affordable, high performance prefabricated façade retrofitting solutions with limited weight and thickness. These are key drivers to fulfil to keep within the structural limit of the original building as well as to reduce the dimensioning of the sub-structure for their installation.
E2VENT	E2VENT	E2VENT is a 42-month European Commission funded project comprising of 13 partners from 8 countries, coordinated by NOBATEK which aims to develop Energy Efficient Ventilated Façades for Optimal Adaptability and Heat Exchange enabling low energy architectural concepts for the refurbishment of existing buildings. E2VENT will develop, demonstrate and validate a cost effective, high energy efficient, low CO2 emissions, replicable, low intrusive, systemic approach for retrofitting of residential buildings, able to achieve Passive Haus retrofit standard levels, through the integration of an innovative adaptive ventilated façade system, including:

		- Smart modular heat recovery units which improves Indoor Air Quality while minimizing energy losses - Cost-effective, easy to install, high performance adapted products for external thermal insulation - A latent system using PCM that allows thermal storage mode for the reduction of energy peaks - A smart building management system enhancing the user experience and allowing future adaptability
e-SAFE project	e-SAFE	e-SAFE aims to contribute to the deep renovation of EU building stock by developing an innovative, market-ready system that combines decarbonization goals with earthquake resilience, indoor comfort, reduced implementation time and costs, affordable financing, reduced occupants' disturbance, increased aesthetic and functional attractiveness. The project includes the demonstration of the e-SAFE system in one real and two virtual pilot buildings.

Regular contact with those stakeholders through news feeds, workshops, roundtables, video meetings and events will provide the Consortium their views. Stakeholders will be invited to be actively involved in openDBL communications actions in WP4 tasks, increasing their impact.

The goal is to ensure the connection and alignment of OpenDBL project to other similar initiatives at EU level. Stakeholders from different countries in project fields like policy makers, researchers, International, European and other formal standardisation Technical Committee members or other activities related to standardisation who could provide the final input for use cases, will be consulted.

A workshop will be organised in M14 to connect the public, the target groups, the media and the stakeholders to the project, whereas a final event in M34 will be organised to communicate the project and inform key stakeholders on the project's main results, continue the dialogue and enhance exploitation.

2.2. Standardization committees

For this task all the relevant European and International Technical Committees for standardisation (CEN/TCs and ISO/TCs) as well as national mirror committees from CEN's member states with the contact point were identified.

The Technical Committees (TCs) are the key bodies of standardisation activity. A TC is a group responsible for the development and drafting of standards which are then

ratified by European Standards Organisations. All stakeholders interested in the draft standard are entitled to participate, but only representatives of National Standardisation Bodies have the right to vote in the Technical Committee. TCs are composed by experts in a specific field representing national committees, industry, professional associations, government, trade union and other stakeholders.

2.2.1. Approach to identify the standardisation committees relevant to openDBL scope.

We have at first analysed International and European standardisation committees, as well as a selection of national standardisation committees.

Then, publicly available information from various websites has been consulted. Moreover, as the standardisation bodies work with an internal system for the registration of members to the European and international TCs (ISO and CEN Global Directory), we used this system to create the list of the relevant TCs and national contact points.

2.2.2. National standardization committees

On a national level, every country has its own standardisation body. These national standardisation bodies (NSBs) are members of ISO/IEC and of CEN/CENELEC.

The way national standardisation is organised, is a national matter, although membership of ISO/IEC and CEN/CENELEC does bring certain obligations regarding e.g. consensus based decision making within committees, voting procedures, etc.

Usually, the NSB establishes national standardisation committees for specific areas. These committees can develop national standards, but also mirror and participate in CEN/CENELEC and ISO/IEC committees.

The national committees dealing with BIM topics encompass the whole AECO value chain: Industry/SMEs, Governmental organisations, Architects, Engineers, BIM software developers, General Contractors, Construction Companies Researchers, National BIM associations etc.

The criteria for choosing specific countries take into account geographical diversity, main roles in European and international standardisation and accessibility of information.

Table 5 – European organisations working in areas relevant to openDBL

Technical Committee	Title/Name	Level	Scope/Description
ASRO/CT 335	Building Information Modelling (BIM)	National/Romania	Standardization in the field of Building Information Modelling (BIM)
B/555	Construction design, modelling and data exchange	National/UK – BSI	Under the direction of the Standards Policy and Strategy Committee, is responsible for the UK input to ISO/TC 59/SC13, ISO/TC 10/SC8 and CEN/TC 442 and for the preparation, revision and amendment of British Standards for digital definition, representation, presentation and exchange of information and knowledge within the Construction industry.
AFNOR/PPBIM.GE2	Échange d'informations BIM	National/France – AFNOR	PP BIM PROPRIETES DES PRODUITS DE CONSTRUCTION
NA 005-13-01 AA	DIN-Normenausschuss Bauwesen (NABau)	National/Germany – DIN	Strategy, Infrastructure (national mirror committee for CEN/TC 442, CEN/TC 442/WG 1, CEN/TC 442/WG 5, CEN/TC 442/WG 6, CEN/TC 442/WG 7, CEN/TC 442/WG 10, ISO/TC 59/SC 13, ISO/TC 59/SC 13/TF 1, ISO/TC 59/SC 13/TF 2)
CTN 332	Digitalization of information of buildings and civil engineering works	National/Spain UNE	Standardisation of the generation, organization and management of digital information covering the life cycle of buildings and civil engineering works, aiming to promote interoperability, communication and efficiency in the construction industry. It includes BIM and digital twin models, covering format, semantic and processes (such as

			safe exchange, control and storage of data), and the functions linked with these technologies. It excludes: Digital technologies and information covered by other committees, such as geographic information systems or formats for particular construction products.
UNI/CT 033/SC 05	BIM and digital management of the informative processes	National/Italy UNI	CEN/TC 442 CEN/TC 442/WG 1 CEN/TC 442/WG 7 ISO/TC 59/SC 13
BDS – Building, building structures and materials		National/Bulgaria - BDS	“Building, building structures and materials”
CYS MC 001	Civil Engineering & Construction Products	National/Cyprus -CYC	operates at a national level in the civil engineer sector
S 808	BIM	National/Denmark - DS	Building Information Modelling
HZN/TO 551 Gradnja (Construction)	Construction	National/Croatia -HZN	Standardization in the field of construction
Luxembourg – ILNAS	Construction	National/Luxembourg – ILNAS	Standardization in the field of construction

2.2.3. International standardisation committees

The International Organization for Standardization (ISO) as well as the International Electrotechnical Commission (IEC) are the responsible standardisation organisations on a global level.

Table 6 – International standardization committees working in areas relevant to openDBL

Technical Committee	Title/Name	Level	Scope/Description
ISO/TC 59/SC13	Organization and digitization of information about buildings and civil engineering works, including building information modelling (BIM)	International	SC 13 is charged by TC 59 to focus on international standardization of information through the whole life cycle of buildings and infrastructure across the built environment: - to enable interoperability of information; - to deliver a structured set of standards, specifications and reports to define, describe, exchange, monitor, record and securely handle information, semantics and processes, with links to geospatial and other related built environment information; - to enable object-related digital information exchange.
ISO/TC 267	Facility management	International	Standardization in the field of facility management
ISO/TC 59/SC 17	Sustainability in buildings and civil engineering works	International	Standardization in the field of sustainability of new and existing construction works in the context of the UN Sustainable Development Goals and climate change mitigation and adaptation. The environmental, economic, and social aspects of sustainability and circular economy are included as appropriate.

In ISO, there are three options for countries participate as:

1. active country,
2. observing country
3. no participation.

Therefore, for the ISO/TCs a distinction is made between active countries (which are countries that actively participate in the TC) and observing countries (which are countries that only follow the work, but not actively contribute to it).

ISO/TC 59/SC 13 *Organization and digitization of information about buildings and civil engineering works, including building information modelling (BIM)*

Table 7 - ISO/TC 59/SC 13 member countries

Involved countries	
Active Members [31]	Brazil, France, United States, Austria, Romania, United Kingdom, Germany, Denmark, Russian Federation, Colombia, Peru, Chile, Portugal, Japan, Republic of Korea, Kazakhstan, Hungary, Belgium, Netherlands, Australia, China, Canada, Finland, Sweden, Slovenia, Norway, Switzerland, Singapore, Spain, Italy, Czech Republic
Observing Members [20]	Argentina, Belarus, Bulgaria, Egypt, Estonia, Greece, Hong Kong Special Administrative Region of China, Iceland, India, Iran-Islamic Republic of, Ireland, Israel, Lithuania, Luxembourg, Malaysia, Poland, Serbia, Slovakia Türkiye, Uruguay

ISO/TC 59/SC 17 Sustainability in buildings and civil engineering works

Table 8 - ISO/TC 59/SC 17 member countries

Involved countries	
Active Members [25]	Austria, Belgium, Canada, China, Denmark, Finland, France, Germany, Israel, Italy, Japan, Kazakhstan, Republic of Korea, Lebanon, New Zealand, Norway, Russian Federation, Saudi Arabia, South Africa, Spain, Sweden, Switzerland, Türkiye, United Kingdom, United States
Observing Members [24]	Argentina, Belarus, Bhutan, Chile, Colombia, Croatia, Czech Republic, Egypt, Estonia, Ethiopia, Hong Kong Special Administrative Region of China, India, Iran Islamic Republic of, Ireland, Kenya, Mexico, Netherlands, Poland, Portugal, Romania, Senegal, Serbia, Singapore, Slovakia

ISO/TC 267 Facility management

Table 9 - ISO/TC 267 member countries

Involved countries	
Active Members [34]	Australia, Austria, Belgium, Brazil, Canada, China, Czech Republic, Denmark, Finland, Germany, Greece, Hungary, India, Ireland, Japan, Kenya, Republic of Korea, Malaysia, Netherlands, Nigeria, Norway, Panama, Peru, Poland, Portugal, Russian Federation, Saudi Arabia, South Africa, Spain, Switzerland, Thailand, Türkiye, United Kingdom, United States
Observing Members [17]	Argentina, Bulgaria, Colombia, Croatia, France, Iran Islamic Republic of, Israel, Italy, Macao Special Administrative Region of China, Romania, Serbia,

	Singapore, Slovakia, Sri Lanka, United Republic of Tanzania, Trinidad and Tobago, United Arab Emirates
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2.2.4. European standardisation committees

European standardisation provides harmonized standards that are a reliable indicator of conformity with relevant EU legislation. At the European level, following EC information directive, standards work is carried out by the European Committee for Standardisation (CEN), the European Committee for Electrotechnical Standardisation (CENELEC) and the European Telecommunication Standards Institute (ETSI).

Table 10 – European standardization committees working in areas relevant to openDBL

Technical Committee	Title/Name	Level	Scope/Description
CEN/TC 442	Building Information Modelling (BIM)	European	Standardization in the field of structured semantic life-cycle information for the built environment. The committee will develop a structured set of standards, specifications and reports which specify methodologies to define, describe, exchange, monitor, record and securely handle asset data, semantics and processes with links to geospatial and other external data.
CEN/TC 350	Sustainability of construction works	European	The committee is responsible for the development of horizontal standardized methods for the assessment of the sustainability aspects of new and existing construction works (buildings and civil engineering works) in the context of the UN Sustainable Development Goals and of the circular economy. The methodological basis will be developed in the context of current needs, European strategies, such as mitigation, adaptation and resilience to climate change, and life cycle thinking. The standards describe coherent methodologies for the assessment of sustainability of construction works covering the assessment of environmental, social and economic performance (aspect and impacts) of buildings and civil engineering works, and the provision of construction product environmental information (EPD).

CEN/TC 348	Facility Management	European	The scope of the CEN/TC is the preparation of European standards for Facility Management (FM) covering operational, tactical and strategic levels to support primary processes.
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- Involved countries**

The European standardisation organisations are associations of national standards bodies according to Belgian (CEN, CENELEC) or French (ETSI) law. Members of CEN and CENELEC are the national standards organisations of EU and EFTA member states, and the national standards organisations of other countries intending to become members of the EU or EFTA

For European standardisation, all countries that are members of CEN automatically are involved in the decision-making process. The involved countries are the 34 CEN members:

Table 11 – Involved countries in CEN

Acronym	Country	Organization	Website
ASI	Austria	Austrian Standards International - Standardization and Innovation	www.austrian-standards.at
NBN	Belgium	Bureau de Normalisation/Bureau voor Normalisatie	www.nbn.be
BDS	Bulgaria	Bulgarian Institute for Standardization	www.bds-bg.org
HZN	Croatia	Croatian Standards Institute	www.hzn.hr
CYS	Cyprus	Cyprus Organization for Standardisation	www.cys.org.cy
UNMZ	Czech Republic	Czech Office for Standards, Metrology and Testing	www.unmz.cz
DS	Denmark	Dansk Standard	www.ds.dk
EVS	Estonia	Non-profit Association Estonian Centre for Standardisation and Accreditation	www.evs.ee
SFS	Finland	Suomen Standardisoimisliitto r.y.	www.sfs.fi
AFNOR	France	Association Française de Normalisation	www.afnor.org
DIN	Germany	Deutsches Institut für Normung	www.din.de

NQIS/ELOT	Greece	National Quality Infrastructure System	www.elot.gr
MSZT	Hungary	Hungarian Standards Institution	www.mszt.hu
IST	Iceland	Icelandic Standards	www.stadlar.is
NSAI	Ireland	National Standards Authority of Ireland	www.nsai.ie
UNI	Italy	Ente Italiano di Normazione	www.uni.com
LVS	Latvia	Latvian Standard Ltd.	www.lvs.lv
LST	Lithuania	Lithuanian Standards Board	www.lsd.lt
ILNAS	Luxembourg	Organisme Luxembourgeois de Normalisation	www.portail-qualite.lu
MCCAA	Malta	The Malta Competition and Consumer Affairs Authority	www.mccaa.org.mt
NEN	Netherlands	Nederlands Normalisatie-instituut	www.nen.nl
SN	Norway	Standards Norway	www.standard.no/
PKN	Poland	Polish Committee for Standardization	www.pkn.pl
IPQ	Portugal	Instituto Português da Qualidade	http://www1.ipq.pt/pt/pages/Homepage.aspx
ISRSM	Republic of North Macedonia	Standardization Institute of the Republic of North Macedonia	http://www.isrsm.gov.mk/en
ASRO	Romania	Romanian Standards Association	www.asro.ro
ISS	Serbia	Institute for Standardization of Serbia	www.iss.rs
UNMS SR	Slovakia	Slovak Office of Standards Metrology and Testing	www.unms.sk
SIST	Slovenia	Slovenian Institute for Standardization	www.sist.si
UNE	Spain	Asociación Española de Normalización	https://www.une.org
SIS	Sweden	Swedish Institute for Standards - SIS	www.sis.se
SNV	Switzerland	Schweizerische Normen-Vereinigung	www.snv.ch

TSE	Türkiye	Turkish Standards Institution	www.tse.org.tr
BSI	United Kingdom	British Standards Institution	www.bsigroup.com

The information related to openDBL project will be disseminated to all CEN members, by establishing a strong communication channel with the TC's secretary and the national contact points.

3. Tools to reach stakeholders

During the project lifetime, a regular contact with stakeholders through newsfeeds, workshops, online meetings, roundtables and events will provide the Consortium with stakeholders' views. Stakeholders will be actively involved in communications actions, increasing their impact. Also synergies will be pursued with given EU initiatives.

- **Webinar** - Webinar has proven to be a key tool in EU initiatives. It provides EU level and worldwide easy accessibility along with cost effective benefits. DIGI, along with all partners will organise webinars time to time to boost the networking activities. The detailed plan can be found in D4.1 and D4.6.
- **Summer/Winter School** - As a part of knowledge sharing and dissemination activity collaborative summer/winter schools can be organised. One summer school already being announced with the collaboration with openDBL partner IN2IT and Politecnico di Milano in July.
- **Demo sessions** - As a part of technology validation, different demo sessions in the pilot sites will be organised with the stakeholders.
- **Social Media Channels** - openDBL has a strong social media presence through which a curated stakeholder engagement can be created.
- **Newsletter** - News Letters are the great source bring new stakeholders on board and engaging the existing once. Digi will distribute Newsletter in every ¾ months based on the project performances. 2 News Letters have been already created by DIGI and In2it. In the more active phases M7-M36 DIGI will actively send the News Letters to the stakeholders
- **Public Relations (PR)** - Through different PR reviews it is possible to reach new stakeholders from different industry verticals.

Conclusions

As the digitalization and circular economy initiatives have grown significantly in EU in the past decades, openDBL team will focus on limited set of stakeholders both at EU and international level. To identify and then prioritize them with the relevance with the project DIGI will closely work with all WPs and update the report from time to time. Therefore, this is a living document which will be updated every 6 months with more stakeholders.